Claims:

Sub A1

1. An apparatus comprising:

a first integrated circuit comprising a Direct Rambus™ ASIC Cell (Direct RAC);

a second integrated circuit comprising a Direct RAC; and

a dual-terminated transmission line, wherein the dual-terminated transmission line communicatively couples the Direct RAC of first integrated circuit with the Direct RAC of the second integrated circuit.

2. The apparatus of claim 1, wherein the dual-terminated transmission line includes a first resistor adjacent to the first integrated circuit and a second resistor adjacent to second integrated circuit.

3. The apparatus of claim 2, wherein the first resistor and the second resistor have a resistance value ranging from approximately 25 ohms to 65 ohms.

4. The apparatus of claim 3, wherein the dual-terminated transmission line has an impedance value, and the resistance value of the first resistor is about 7-12% higher than the impedance value of the dual-terminated transmission line.

5. The apparatus of claim 3, wherein the dual-terminated transmission line has an impedance value of about 50 ohms, and the first resistor has a resistance value of about 55 ohms.

6. The apparatus of claim 1, wherein the second integrated circuit comprises a memory repeater hub.

7. The apparatus of claim 1, wherein the first integrated circuit and the second integrated circuit are adapted to provide source-synchronous communication between each other.

8. The apparatus of claim 1, wherein the dual-terminated transmission line is adapted to provide a clock signal at a rate in excess of 250 MHz.

9. The apparatus of claim 8, wherein the dual-terminated transmission line is adapted to provide a clock signal at a rate ranging from about 300 MHz to 800 MHz.

10. ~~The apparatus of claim 1, further comprising:~~

a mezzanine card having a connector and comprising the second integrated circuit, wherein the connector is adapted to be communicatively coupled to a third integrated circuit.

11. The apparatus of claim 10, wherein the connector includes a first metal line and a second metal line, the second metal line being longer than the first metal line, and wherein the second metal line has a parasitic capacitance value greater than a parasitic capacitance value of the first metal line.

Sub A2

12. The apparatus of claim 11, wherein impedance of the first metal line is substantially equal to impedance of the second metal line.

11 ~~13~~. The apparatus of claim 10 ~~12~~, wherein the connector has a first portion and a second portion, the second portion being at an angle ranging from about 30 degrees to 40 degrees relative to the first portion.

12 ~~14~~. The apparatus of claim 11 ~~13~~, wherein the second portion is at an angie of about 25 degrees relative to the first portion.

Sub A3

15. The apparatus of claim 10, wherein the third integrated circuit comprises a Rambus™ in-line memory module communicatively coupled to the connector.

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14 ~~16~~. An article comprising:

a memory module including a connector that is adapted to be coupled to a first integrated circuit; and

wherein the connector has a first line and a second line, the second line being longer than the first line, the second line having a capacitance value greater than a capacitance value of the first line, and wherein impedance of the second line is approximately equal to impedance of the first line.

15 ~~17~~. The article of claim 14 ~~16~~, further comprising:

a second integrated circuit; and

a transmission line adapted to communicatively couple the first integrated circuit and the second integrated circuit, wherein the transmission line has an impedance value ranging from about 25 ohms to 35 ohms.

16 ~~18~~. The article of claim 14 ~~16~~, further comprising:

a second integrated circuit; and

a dual-terminated transmission line adapted to communicatively couple the first integrated circuit and the second integrated circuit.

Sub A4

19. A method of making an article, comprising:

providing a first integrated circuit having a communication module;

providing a second integrated circuit have a communication module; and

forming a dual-terminated transmission line to couple the first integrated circuit to the second integrated circuit.

20. The method of claim 19, further comprising providing a connector having a first line and a second line, wherein the first line and the second line are communicatively coupled to the first integrated circuit, and wherein the second line is longer than the first line, has a capacitance value greater than a capacitance value of the first line, and impedance of the second line is approximately equal to impedance of the first line.

21. A method of communicating between a first integrated circuit and a second integrated circuit, comprising:

providing a dual-terminated transmission line communicatively coupling the first integrated circuit and the second integrated circuit; and

transmitting data signals across the dual-terminated transmission line at a rate in excess of 1 Gbytes/sec.

22. The method of claim 21, wherein providing a dual-terminated transmission line includes providing a dual-terminated transmission line having an impedance ranging from about 45 Ohms to 55 Ohms.